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Field Investigations in Pomology

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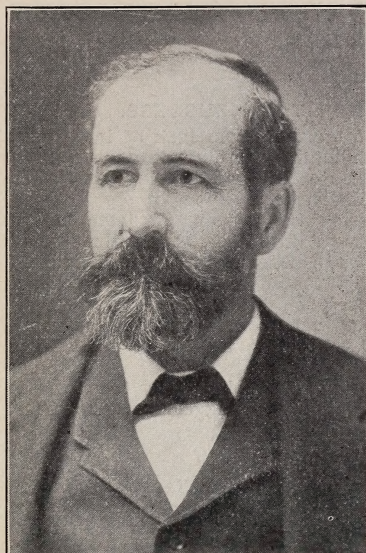
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CRETE NURSERIES

Crete, Nebraska

Please bring this circular on Delivery Day.

HOW TO PLANT

**These Directions Must be Read and Followed
to Insure Success**

NOTICE OF TREE DELIVERY

Mr. Your No. is

Your order for Trees, Plants, Vines, etc., amounts to \$

If any mistake is made in filling in the amount here, the original order shall be the final proof of the amount due.

It will be delivered at, in care of


....., on the day

of 19, all accidents and delays excepted.

Please be Prompt to Call on that Day for Them.

If not delivered as above, through unavoidable accident of transportation, notice of the time of delivery will be given on the above named day and place. Be prepared to protect the stock on the way home. We trust you will try to care for it as well as we have, and thus secure that success which will please you and do credit to us.

E. F. STEPHENS, Crete Nebraska.

 **PLEASE BRING THIS CIRCULAR.**

WHERE AND HOW TO PLANT AND AFTER CULTURE

CONCISE DIRECTIONS OFFERED FOR YOUR SUCCESS.

Nine-tenths of the trees lost annually are lost either from lack of intelligent care or from lack of care altogether. It is a peculiar fact that results are often expected from neglected trees that would be considered impossible from other crops or from horses or cattle under similar conditions.

Trees carelessly or ignorantly cared for are costly to you and damaging to us. You not only lose the money and labor you put into them, but failure often discourages you from further planting. We, on the other hand, after delivering fine, healthy, well-grown trees, are often unjustly blamed for the loss occasioned by the carelessness or ignorance of the planter.

It has been our experience that customers are much more painstaking about planting their trees than about cultivating and protecting them after they have them planted.

No matter how carefully corn might be planted it would be folly to expect it to succeed if abandoned after one cultivation. Many a young orchard, however, suffers from just such neglect.

THE STARTING POINT.

It is our purpose to deliver trees that shall be in most excellent condition to grow when received. We are as solicitous about this as you can possibly be. We expect to sell to the same customers year after year, and our future business depends upon it. Having delivered good stock in good condition, however, you will readily agree that it would be unfair to hold us responsible for misfortune or neglect that might befall the trees thereafter.

SUGGESTIONS TO PLANTERS.

Actuated by his desire to help his customers attain success, the average nurseryman endeavors to pack his trees and have them reach his customers in condition to grow, not only as a point of commercial honor, but to build up his business. The grower and the shipper having done this, it is incumbent upon the planter in a responsive way to do all he can to attain success.

Trees ignorantly or carelessly handled discourage the planter, who on his part not only loses the money and labor which he puts into the effort, but his failure is discouraging to his friends and neighbors and to that extent impairs the development of the country.

If the trees when received from the railroad station are not in proper and perfect condition to grow, there should be an immediate report made to the nurseryman who made the shipment. The time to take up questions in regard to damage and loss is at that time, and not after a season of partial neglect, to write back to the shipper and state that his trees must have been weak in vitality because the planter had failed in securing a satisfactory growth. If the farmer goes to the store to purchase a bill of dry goods, implements or machinery, he usually examines it at the time of purchase and satisfies himself that he is securing what he is paying for.

WHERE TO PLANT.

While the commercial orchardists in most districts prefer a northeasterly slope, the family orchard should be near the house without reference to the slope; in other words, do not put a family orchard on a remote corner of the farm, simply to take advantage of a northeasterly slope. We have orchards planted on all slopes as well as uplands and bottom lands, and usually the orchards do well in all locations. The location as to slope is not as important as the care the orchards receive after planting.

We thoroughly believe in windbreaks to the south, west and north of the orchard. A north windbreak lessens the extreme rigor of winter winds. The windbreak on south and west lessens the aridity of dry winds in summer, and a row of lofty-growing trees on the east prevents the rays of the sun from raising the temperature too quickly, after a frosty night.



TREES MUST BE TRIMMED WHEN PLANTED.

The proper way. From left to right of photo. Whitney crab trimmed. Extra Select Ironclad apple not trimmed. The same trimmed. Select Grade apple trimmed. Extra Select cherry trimmed. The same not trimmed. Extra Select yearling cherry not trimmed. Peach, 6 to 7 feet, trimmed. Extra Select yearling cherry trimmed. Peach, 6 to 7 feet and 5 to 6 feet not trimmed. Three peaches trimmed. Extra Select plums, trimmed and untrimmed.

After having thoroughly plowed the ground, and done all that can be done by plowing, pulverizing and harrowing, part of the hand labor of digging holes can be saved by cross-marking and then running the lister to the utmost depth possible to attain, then planting the trees at the intersection of the cross-marking. In semi-arid regions, it is well to plant fruit trees six or eight inches deeper than they stood in the nursery row. Our habit is to plant without the use of water, until the earth has been filled in three inches over the roots, and thoroughly tramped. Leave a basin surrounding the tree. If the soil is not sufficiently moist, add two pails of water to a tree. After this water has soaked away, then cover this wet surface with three or four inches of earth, leaving the surface loose. Never tramp the wet soil. Plow and cultivate the ground in such manner that the slope of the ground is toward the tree, then heavy dashing summer showers throw an increased percentage of water to the trees. After cultivation, ultimately and gradually allow the ground to become level.

MULCHING.

Cultivation gives the best mulch of all. If you can give perfect cultivation, you have the best possible mulch. If circumstances are such that you cannot, or will not do this, then mulch with stable litter or any material that will retain the moisture.

TREATMENT OF TREES WHEN RECEIVED.

Bundles should be promptly opened and the roots soaked in water. While waiting to plant, it is well to bury the trees and plants in ground, temporarily, in such manner that the moist, mellow earth will come in contact with all the roots and trunks and thoroughly protect them from the air. If by reason of delay, the trees should be shriveled when received, they can be brought out in safety by burying them entirely in moist earth, root, body and branch, for two or three days. It sometimes happens that the weather, after planting, is very unfavorable; the evaporation may be very rapid. Trees that have just been planted can take up but very little moisture from the ground, no matter how much water you apply, until they have made granulations for new root growth. Under such conditions, the sap within the trees or plants may be rapidly exhausted before granulations have formed and a fresh supply of sap is taken up. Perhaps the tree does not leaf out, or perhaps it comes out with small, delicate leaves and then the hot, dry winds damage the trees. Under such conditions, these trees can be saved by boxing in the trunks with 6x6 fencing. Fill this upright box with moist soil; wet this soil within the box three times a week. This will usually cause the trees to leaf out within ten days and to grow the season through. This method has been thoroughly tested and is of the utmost importance. It is very much cheaper to put in a little extra work and save your trees than to lose a year's time as well as the trees. Leave these boxes around the trees during the winter. In trying climates, boxing in trees is of great value in guarding against winter sun scald, so destructive to trees in the west and north-west.

TRIMMING.

Apparently the well-meaning planter dislikes to trim his trees when he receives them. He seems to feel that he is mutilating a thing of life. Perhaps he feels that it affects the looks of the trees, and so it does temporarily, but at the end of the season, the trees which are balanced up will be found to have made twice the growth of trees not trimmed. Over and over again, we have planted thousands of trees out of the same blocks and same lots as those shipped to our customers, and have found in our experience that a judicious shortening of the top, to strike a balance between top growth and root system, was immensely helpful; first, in its lessening the loss of sap by evaporation for the tree replanted, second by enabling it to endure the shock of transplanting; to more quickly establish proper conditions of growth, and finally in the course of the season to make a far stronger growth than the trees not shortened.

It is quite important that each kind of trees be trimmed in accord with its peculiar qualities. With apple trees, our habit is to shorten back something like three-quarters of the growth of the side branches, leaving a dominant center so that the next set of branches will be twelve to eighteen inches above the lower set of branches. Shortening back should rarely be construed to mean to remove any of the branches. Rather, shorten the branches and leave all that were on the trees when received from the nurseryman. As a rule, the nurseryman has left on the tree only a suitable number of branches to form a symmetrical head.

Cherry trees have fewer buds on the branches than the apple tree, hence the side branches of the cherry should be trimmed with reference to the number of strong, vigorous buds to each branch remaining. Sometimes buds are injured in transportation or by packing into cases. Three or four buds should be left on each branch of the cherry tree, which will leave the branch from one-half to a little more than one-half its original length. Count the buds to determine to what point to shorten the branch.

The peach tree belongs to still a different type of trees and should be handled in a different manner. Most growers now prefer to head their trees rather low. The peach tree almost invariably reaches the planter in the condition of one year from the bud, or in the case of a June bud, only a few months from the bud. Usually there are a goodly number of buds up and down the trunk of the peach trees, and trees that are 5 to 6 feet or 4 to 5 feet in height, may usually be cut back to perhaps thirty inches, and then the buds at the base of each branch usually start and make a vigorous growth in the course of the season.

Plum trees are trimmed very much in accord with the suggestions given for apple trees.

Small fruit like currants and gooseberries should be severely shortened in and depend for the season's growth on the lower buds. This is peculiarly true in the handling of ornamentals, roses and shrubs. They should be cut back in proportion to the plant and root system. Roses, in the condition ordinarily received, should be cut back to within six inches of the ground, and then depend on starting some vigorous shoots from near the surface of the ground. Frequently in trying to supply all the branches to the tip with sap, the root system which has been lessened by the shock of digging is unable to supply a sufficient amount of sap to any of the branches. Under such conditions the plant is stunted and handicapped from the outset. In contrast to this, trees properly trimmed at planting time, frequently make a growth of twenty-four to forty inches the same season set. Over and over in our orchards we have had trees put on a growth of thirty to fifty inches the first season, this of course when the trees were properly planted and thoroughly cultivated, giving them every opportunity to do their best.

These suggestions are supremely important also in the planting of shade trees.

TRUNK PROTECTION OF UTMOST IMPORTANCE.

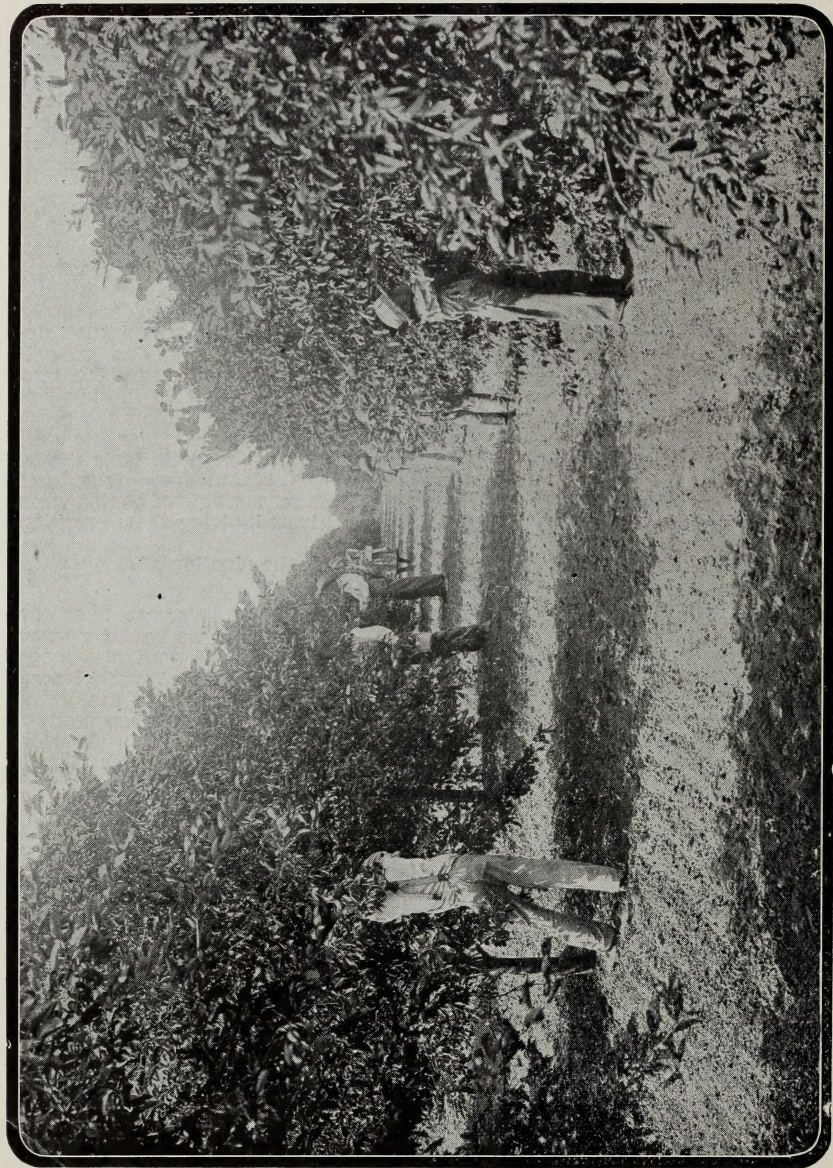
To lessen the evaporation from the trunk of the tree and damage from the heat of the sun and also the effects of the aridity of the wind, we have for some years adopted the method of protecting the trunks of trees with wooden veneers, corn stalks, cloth, heavy paper (never black paper), or anything that would lessen the effect of the sun on the trunk. It should be remembered that trees are grown closely in the nursery row; that in the nursery they are protected by each other. When transplanted into the open ground, the bark often times suffers severely, the same as your arm would sunburn, if you should roll up your sleeves in mid-summer.

CONTROLLING THE FORM OF THE TREE.

The planter should observe that not all buds of a branch are on the outside, nor are they all on the inside, near the center, but are distributed around the whole circumference of the twig. This is of importance to the planter. Why? Because it enables him, at will, to control the future shape of the tree. If the tree is so formed as to carry an open head, the sunlight is admitted to the center of the tree, the fruit colors better and it is more attractive, therefore in shortening the branches, it is wise to trim trees that normally have an erect habit in such manner that the last bud is an outside bud. Usually the flow of sap forces the most vigorous growth to the last bud left on the branch. Now if the last bud is an outer bud, the effect is to give the head of the tree a spreading form. In case the form of the tree is such that the branches are unevenly distributed about the trunk, should the last bud be a side bud, then the tendency of the growth is to close the opening and give more symmetrical form. In trimming trees that have a very sprawling, spreading form, then the reverse would be the proper method, leaving an inner bud, which would assist in correcting a sprawling form of growth. It is wise in pruning a tree to train it to a growth that shall protect the trunk from sun scald, that is that the trunk of the tree may be properly protected from south and southwesterly winds.

AFTER CULTURE.

In the first two years lies much of the secret of success with trees and plants. We find that most people plant trees, but we regret that very many neg-



FIVE YEAR CHERRY ORCHARD, CRETE NURSERIES. YIELD 110 BUSHELS ANNUALLY. CULTIVATED 12 TO 20 TIMES WITH DISC
HARROW AND ACME PULVERIZER.

lect them afterwards. In the growing of nursery stock, particularly apple and forest seedlings, where we have been desirous of getting the utmost possible growth in one season, we have found that in the middle of summer it was advantageous to cultivate as frequently as once in four days, that the trees that were cultivated six or seven times a month gave as a result at the end of the season a larger percentage of No. 1 plants than blocks of stock less frequently cultivated. We would suggest however, that with most planters, cultivation once a week would answer fairly well, or oftener, if there should be a shower of rain between, to crust the surface. During that portion of the summer when rain does not fall and a crusted surface is not developed, three times a month will often times secure fair results. It is our belief, based on thirty-five years' experience, that the aeration of soil that goes with frequent cultivation helps to develop an increased amount of plant food. Our own orchards have been cultivated ten to twenty times yearly and where orchards were over laden with fruit and the season was very dry, we have sometimes cultivated the surface as often as once each way weekly.

In the extremely dry season of 1894, we secured a crop of four hundred bushels of apples per acre in one of our orchards, maintaining a suitable degree of moisture by frequent cultivation. Although that season was extremely dry, the last days of August, we found on examination a good degree of moisture up to within two inches of the surface. At Benton Harbor, Michigan, during a certain season, there was not rain enough to wet the ground to a depth to exceed an inch from the 28th day of May till the 14th day of September. Mr. Roland Morrill cultivated his eighty-acre peach orchard forty times in forty consecutive working days, using Breed's weeders. Four teams cultivated the eighty acres of orchard once each day, six days in the week for forty days. The results were most happy and entirely satisfactory to Mr. Morrill. Whereas his neighbors' orchards suffered very seriously from the unnatural drouth, his own orchard went through in such form that his trees retained their full measure of vitality and the next year gave him a crop that sold for \$35,000 from eighty acres. His peach trees averaged eight bushels per tree.

WHAT TIME IN THE SEASON TO CEASE CULTIVATION.

The object of this intensive cultivation is to carry an orchard as the railroad runs an express train, at full speed, and then by the application of the brakes the momentum of the train is stopped at the proper point, at the station; so the orchard is pushed to a vigorous growth until the first of August, then as a rule, cultivation should cease. Sometimes conditions as to weed growth or moisture are such that it is admissable to continue cultivation until the middle of August; other seasons it is wise to check cultivation by the middle of July and allow the development of light weed growth, which shall assist in checking the rapid, or unripe growth and cause the trees to ripen in season to be ready for the first, autumnal freeze. In a general way trees should be cultivated later the first season after planting than after they have attained such a vigorous root system, as to create a liability to too late growth and unripe wood.

In the handling of forest trees, varieties like black locust, which normally have a very rapid growth, should be checked by midsummer, lest on account of their tendency to grow with great vigor, they may be unripe at the coming of the first autumnal freeze, and the tops may be frozen back. In the case of trees like the black locust and the catalpa, as they increase in age and growth is distributed into a larger number of branches, there is less liability to unripe growth and damage from premature cold. Trees that are heavily branched ripen earlier than those which are pushing long shoots.

Under arid or semi-arid conditions, it is not wise to seed down the orchard at any time. We are still cultivating our thirty-five-year-old orchards from eight to twelve times each season.

RABBITS.

Do not fail to guard the young trees against rabbits. The protection given to guard against snail will perform a dual purpose of guarding against rabbits, or in case this has not been done, as in case of forest trees where the number of trees is so large it is not convenient to tie up each tree, then it is well to remember that the rabbit has a sensitive nose and can be kept away by applying with a swab a combination of blood, soap and tobacco; sometimes we have added red pepper or crude carbolic acid or any offensive substance. The use of a slight amount of flour in the combination makes it more adhesive and less liable to wash off.

WINTER MULCHING.

Currants, gooseberries, raspberries and blackberries should be heavily mulched before winter sets in. Stable litter is usually the most convenient for currants and gooseberries. We use straw in the raspberry and blackberry plantations. In the case of these plants, we allow the straw to remain on the rows the entire season with the result that it checks the growth of weeds and retains the major portion of the moisture for the benefit of the plantation. Since adopting this method, we have never failed to secure a crop of fruit. Fortunately the raspberry and blackberry plants blossom so very late in the season that they are rarely or never injured by the late spring freeze.

About the time the ground commences to freeze, the strawberry should be covered with old hay or stable litter may be used, if free from weed seeds.

We have found it wise to trim our vineyards each fall. Drop the canes to the ground, cover with straw and put over them earth enough to hold the straw down tightly to the case. We regard this as very, very important. The vines left up, will often dry out and sometimes suffer severely during the winter from extreme cold. The cost is slight. We cover our grapes with straw and dirt at a cost of not more than 2 cents per vine, and the increased certainty of the return makes this a paying investment.

REPLACING.

When we contract to plant and care for commercial orchards and have the planting and cultivation in our own hands, we sometimes warrant trees to grow for a series of years.

When nursery stock passes out of our hands however and is left to yourself and Providence, we do not make a guarantee of any kind. We cannot guarantee that Providence will not send a dry season, a hail storm, or a hard winter; and we cannot guarantee that you will give the trees and plants such unremitting care as will insure success.

If you meet with misfortune, however, we are willing to be more than liberal with you. Where statements are sent in within four months, showing losses from any cause other than neglect, we replace at half price. We do this not because we are responsible for misfortunes that may befall the trees after they have left our hands, but simply to help you out.

We do not replace vines that have not been trimmed at planting time, nor trees lost through carelessness or neglect.

YOUR CONTRACT.

If your order was given on one of our regular order blanks please note that the contract you have signed reads in part as follows:

"If stock is not called for by purchaser at time notified to come, it may be delivered at his residence at his expense. Stock is at purchaser's risk after date of delivery. It is agreed that countermands shall not be given or accepted."

These provisions are the same as those adopted by all nurseries for their protection.

Trusting that all of our customers will meet with abundant success, I am, very sincerely yours,

E. F. STEPHENS, Prop., Crete, Neb.

VALUABLE INFORMATION FREE.

We are interested in your success and will be glad to answer horticultural questions at any time. Our thirty-five years' of experience gained in dealing with horticultural problems in all part of Nebraska and the West is at your disposal.

We would also suggest that you subscribe for some paper dealing with horticultural subjects, such as the

Twentieth Century Farmer, Omaha.
Nebraska Farmer, Lincoln.
Western Fruit Grower, St. Joseph, Mo.
The Hospodar (Bohemian), Omaha.
Prairie Farmer, Chicago.
Orange Judd Farmer, Chicago.
Tribune Farmer, New York, City.
The Scientific Farmer, Lincoln, Neb.